# Third trimester bleeding and management

# Differential Diagnosis of Third Trimester Bleeding

**Placenta Previa**

**Placental Abruption**

Uterine Rupture

Vasa Previa

Early labor

Coagulation Disorder

Vaginal Lesion/Injury

Cervical Lesion/Injury

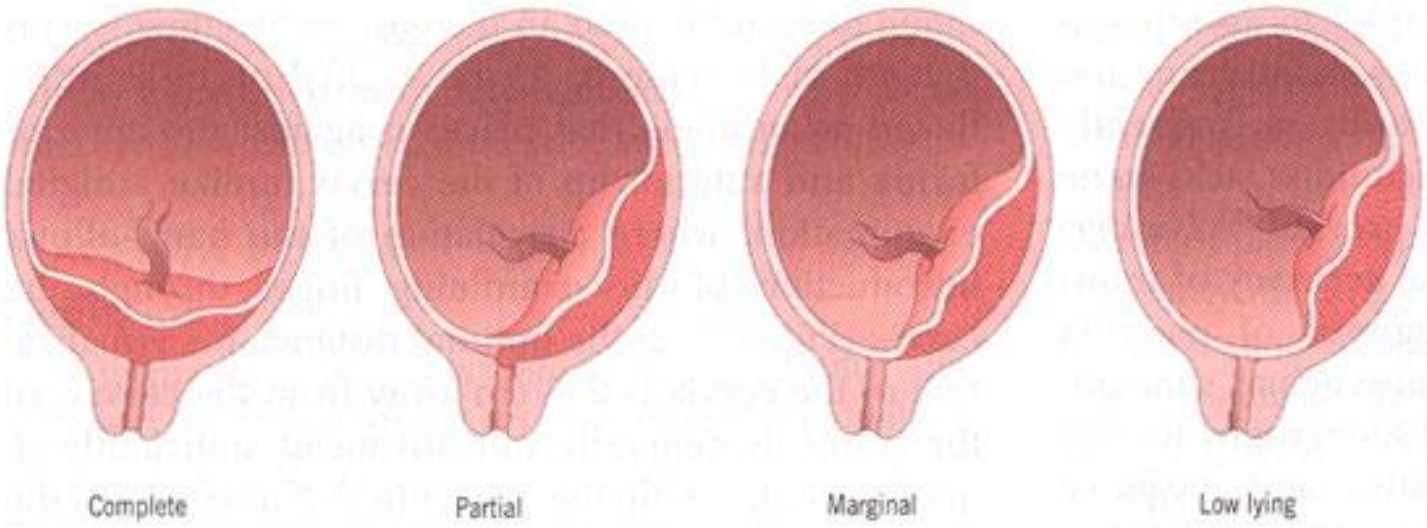
Neoplasia

Bloody Show

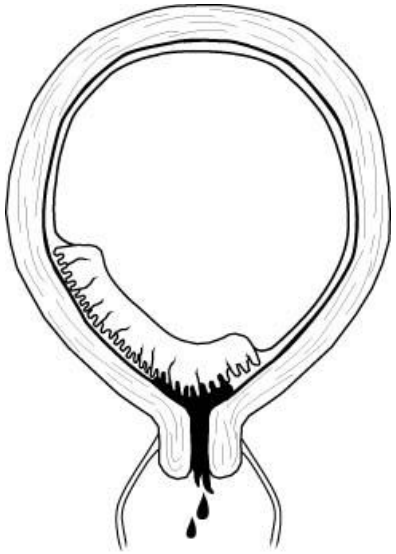
Hemorrhoids

# Placenta Previa

- Defined as the abnormal implantation of the placenta in the lower uterine segment



# Placenta Previa



- Bleeding results from small disruptions in the placental attachment during normal development and thinning of the lower uterine segment
- The degree of placenta previa cannot alone predict the clinical course accurately, nor can it serve as the sole guide for management decisions
- As a consequence the importance of presented classifications has diminished

# Placenta previa - Epidemiology

- 4 percent of ultrasound studies performed at 20 to 24 weeks
- 0,4% at term
- The diagnosis of placenta previa is common before the third trimester, but up to 95% resolve before delivery
- Placental migration ?

# Placenta Previa

- The length by which the placenta overlaps the internal os at 18 to 23 weeks is highly predictive for the persistence of placenta previa
- Overlap less than 1.5 cm at 18 to 23 weeks, placenta previa typically resolves
- Overlap 2.5 cm or greater at 20 to 23 weeks, persistence to term is likely

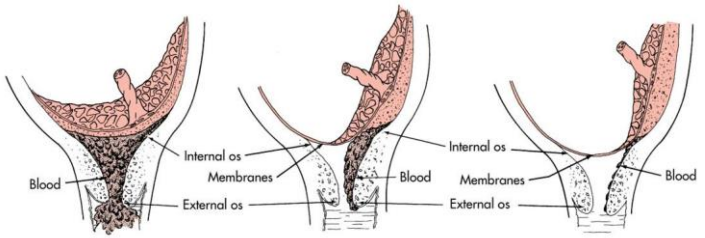



**Figure 31-8** Types of placenta previa after onset of labor.



Becker RH, Vonk R, Mende BC, Ragosch V, Entezami M. The relevance of placental location at 20–23 gestational weeks for prediction of placenta previa at delivery: evaluation of 8650 cases. *Ultrasound Obstet Gynecol*. 2001;17:496–501.

# Placenta Previa - Risk Factors

- Previous CS
- Previous uterine instrumentation
- Multiparity
- Advanced maternal age
- Smoking
- Multiple gestation
- Prior placenta previa
- Uterine fibroids

# Placenta Previa - Risk Factors

- 4.8‰

- Risk of recurrent placenta previa is 4% to 8%
- Risk of placenta previa increases with the number of prior cesarean sections, rising to 10% with four or more
- For woman older than 40 years risk is 2%

# Placenta Previa - Clinical presentation

- Episode of bleeding has a peak incidence at about the 34th week of pregnancy
- One-third of cases become symptomatic before the 30th week and one-third after the 36th week
- Approximately 10% of cases, bleeding begins only with the onset of labor

# Placenta Previa - Diagnosis

- Transabdominal sonography
- Transvaginal sonography
- Translabial sonography
- Magnetic resonance imaging

# Placenta Previa - Morbidity and Mortality

- Placenta Previa is rarely a cause of life-threatening maternal hemorrhage unless instrumentation or digital exam is performed

- The most common morbidity with this problem is the necessity for operative delivery and the risks associated with surgical intervention

- Perinatal morbidity and mortality are primarily related to the complications of prematurity, because the hemorrhage is maternal.

# Placenta Previa - Morbidity and Mortality

- Goal is to obtain the maximum fetal maturation possible while minimizing the risk to both the fetus and the mother

- In a significant proportion of cases delivery may be safely delayed to a more advanced stage of maturity

# Placenta Previa - Management

- It is reasonable to hospitalize women in the situation of acute bleeding episode or uterine contractions
- Women who present with bleeding in the second half of pregnancy should have a sonographic examination for placental location ***prior*** to any attempt to perform a digital examination

# Placenta Previa - Management

- Wide-bore intravenous cannulas
- Blood count and type and screen
- At least 4 units of compatible packed red blood cells and coagulation factors at short notice
- Rh immune globulin to Rh-negative women
- Kleihauer-Bettke test for quantification of fetal-maternal transfusion in Rh-negative women

# Placenta Previa - Management

- Steroids should be administered in women between 24 and 34 weeks of gestation
- Before 32 weeks of gestation, with no maternal or fetal compromise blood transfusions should be considered
- Tocolysis ?
- Cerclage ?

# Placenta Previa - Management

- When the patient has had no further bleeding for 48 hours, she may be considered for discharge
- Women who are stable and asymptomatic, and who are reliable and have quick access to hospital, may be considered for outpatient management

# Placenta Previa - Delivery

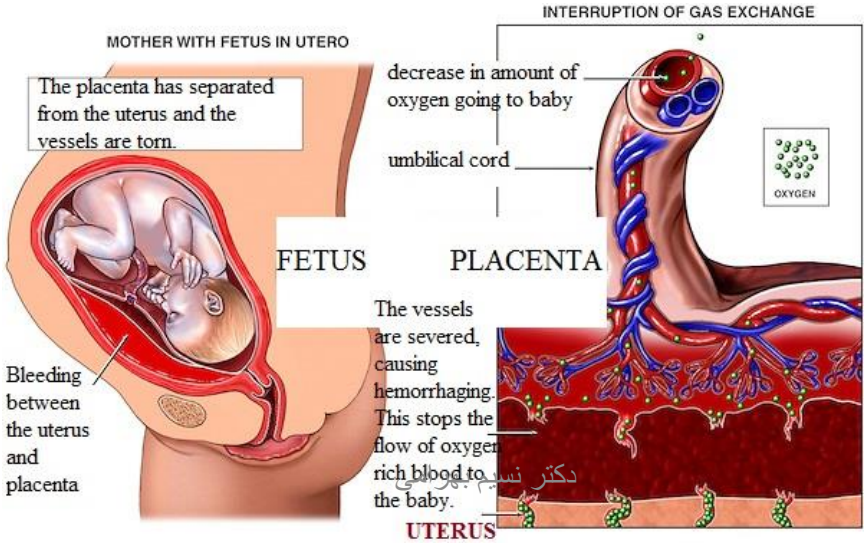
- Cesarean delivery at 36-37 weeks of gestation - documentation of fetal lung maturity by amniocentesis
- Placental edge is 2 cm or more from the internal os at term - good chances to deliver vaginally
- Regional anesthesia - less blood loss and requirements for blood transfusion

# Placental Abruption

- Defined as the premature separation of the placental from the uterine wall
- Occurs in 0,9%
- Neonatal death incidence of 10 to 30%.

# Placental Abruption - Patophysiology

- Source of the bleeding is small arterial vessels in the basal layer of the decidua
- Compression by the expanding hematoma leads to obliteration of the overlying inter-villous space
- Destruction of the placental tissue in the involved area - loss of surface area for exchange of respiratory gases and nutrients



# Placental Abruption - Patophysiology

- Extravasation into the myometrium and through to the peritoneal surface - Couvelaire uterus
- Access to the vagina through the cervix - no reliable indication of the severity of the condition.
- Through the membranes into the amniotic sac - port wine discoloration

# Placental Abruption - Risk Factors

- Hypertensive Disease of Pregnancy
- Smoking
- Substance abuse
- Trauma
- Short umbilical cord or uterine anomaly
- Polyhydramnios
- Previous abruption
- Unexplained elevation of MSAFP
- Maternal age and parity
- Inferior vena cava compression

# Placental Abruption - Clinical presentation

- Vaginal bleeding, abdominal pain, uterine contractions, and uterine tenderness

- The amount of external bleeding may not accurately reflect the amount of blood loss.

# Placental Abruption - Diagnosis

- Ultrssonography - exclude placenta previa
- Sensitivity of ultrasonography in diagnosis of placental abruption is approximately 25%
- Doppler flow changes
- Thrombomodulin - a marker of endothelial cell damage

- **Clinical diagnosis** !!

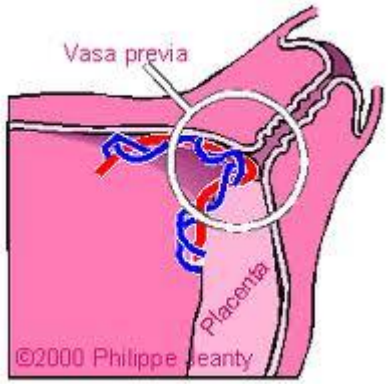
# Placental Abruption - Management

- Vital signs – RR!

- IV line – large bore
- Diagnostic procedures
- Plan for delivery

- Underlying hypertensive condition
- Blood samples
- Ultrasound
- The method and timing of delivery depend on the condition and gestational age of the fetus, the condition of the mother, and status of cervix

# Vasa Previa




- Rarely reported condition in which the fetal vessels from the placenta cross the entrance to the birth canal
- Reported incidence varies, but most resources note occurrence in 1:2500 pregnancies
- Associated with a high fetal mortality rate (50-95%) which can be attributed to rapid fetal exsanguination resulting from the vessels tearing during labor

# Risk Factors for Vasa Previa

- Bilobed and succenturiate placentas
- Velamentous insertion of the cord
- Low-lying placenta and/or placenta previa
- Multiple gestation
- Pregnancies resulting from in vitro fertilization
- Palpable vessel on vaginal exam
- Maternal history of uterine surgery

# Vasa Previa - Management

- When vasa previa is detected prior to labor, the baby has a much greater chance of surviving

- It can be detected during pregnancy with use of transvaginal sonography, preferably in combination with color Doppler

- Some researchers have suggested screening color Doppler in the second trimesters of patients with risk factors present on routine 20 week ultrasound

# Vasa Previa - Management

- When vasa previa is diagnosed prior to labor, elective caesarian delivery can save the baby's life

- The International Vasa Previa Foundation recommends hospitalization in the third trimester, delivery by 35 weeks, and immediate blood transfusion of the infant in the event of a rupture

# Vasa Previa - Diagnosis in the Acute Setting

- Clinical scenarios suggesting vasa previa:

-significant bleeding at the time of membrane rupture

-fetal heart rate abnormalities associated with vaginal bleeding

-palpable vessels on vaginal examination

# Take-home message

- Development of clinical guidelines and protocols designed to provide early diagnosis of patients at risk for major obstetric hemorrhage and efficient care in emergency situations

# Take-home message

- Multidisciplinary team capable to perform all diagnostics procedures and management including emergency peripartum hysterectomy is essential